

Classroom activity

Which Job Offer Should You Take?

Name: _____

Date: _____

Student Scenario

Your Situation:

You have just graduated from college and received two different job offers. At first glance, one job appears to pay more immediately. However, the other offer includes larger yearly raises and stronger long-term growth potential.

Your task is to analyze both salary plans and decide which job offer you would accept.

As you investigate the salary growth of each position, you will compare short-term earnings, long-term growth, and other important career factors that influence real financial decisions.

By the end of the investigation, you should be able to explain:

- Which job earns more money over time
- Which offer reaches \$100,000 first
- Which job you would personally choose
- What additional factors beyond salary might influence your decision

Job Offers

Offer A – Horizon Analytics

- Starting salary: \$80,000
- Salary increases by 3% each year

Offer B – Summit Data Group

- Starting salary: \$88,000
- Salary increases by 2% each year

Investigation Tasks

BEFORE YOU CALCULATE

Make a prediction before building your models. At first glance, which job offer do you think is better?

- ☐ Job Offer A
- ☐ Job Offer B
- ☐ I'm not sure yet

Why do you think so? What information do you think will matter most?

- ☐ Starting salary
- ☐ Yearly raise percentage
- ☐ Total earnings over time
- ☐ How quickly salary reaches \$100,000

Continued

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Part 1 – Build the Models

Work with your group to model each salary plan.

1. Write a recursive equation for each salary model.
2. Write an explicit equation for each salary model.
3. Complete a salary table showing growth over 15 years.
4. Graph both salary models on the same coordinate plane.

SALARY GROWTH INVESTIGATION

Use the tables below to model the salary growth of both job offers. Then graph both salary models on the same coordinate plane.

RECURSIVE EQUATIONS

Job Offer A: _____

Job Offer B: _____

EXPLICIT EQUATIONS

Job Offer A: _____

Job Offer B: _____

Job Offer A		Job Offer B	
Offer (x)	Salary (\$)	Offer (x)	Salary (\$)
0		0	
1		1	
2		2	
3		3	
4		4	
5		5	
6		6	
7		7	
8		8	
9		9	
10		10	
11		11	
12		12	
13		13	
14		14	
15		15	

Continued

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Part 2 – Compare the Offers

Use your models, graphs, and tables to answer the following questions. Use mathematical evidence to support each answer.

1. Which job earns more money during the first few years?
2. Which salary grows faster over time?
3. Approximately when do the salaries become equal?
4. Which offer reaches \$100,000 first?
5. If someone only planned to stay at the company for 3 years, which offer would you recommend?
6. If someone planned to stay for 10 years or longer, would your recommendation change? Explain.

Part 3 – Make a Recommendation

Your group must decide which job offer you would accept and prepare a mathematical justification for your decision.

Your recommendation should include:

- Mathematical evidence
- Graphs or tables
- Long-term comparisons
- At least one non-mathematical factor that influenced your decision

Examples might include:

- Work-life balance
- Location
- Benefits
- Career advancement
- Company culture

Final Reflection

1. Did your opinion about the “better” job change after modeling the salaries mathematically? Why or why not?
2. Why can exponential growth sometimes be misleading when comparing long-term financial decisions?
3. What other situations in real life involve exponential growth?